SOME SURGICAL THOUGHTS ON APPENDICITIS FROM A CLINICAL STAND-POINT.[1]

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THE treatment of appendicitis by early operative interference, as advocated and practised during the past few years, appears to be passing through the same stages that have marked the progress of almost every important change proposed in the management of either medical or surgical diseases. Ridicule, sober judgment based on experience, and adoption or rejection constitute those three stages. The first is passed, and we are well advanced in the second stage; and the outcome will be a final agreement between physicians and surgeons that will be as satisfactory to both as it is desirable and important that it should be.

I have ventured in this short paper to present the results of my own observation, not with the hope or desire of adding anything new on a subject which is being so fully discussed and to which this Society has contributed so much of permanent value; but with the feeling that any deduction drawn from even a moderate experience may have their value in reaching conclusions which will receive general adoption. Novelty, therefore, is not claimed for any views here expressed; nor does it seem desirable; but if your own experience confirms them, it will be even more satisfactory than if they were new.

I have purposely avoided the relation of statistics, because I am sure I have seen harm result from being too much influenced by them in the treatment of the case; and the patient has been cheered by false hopes, or lulled into a feeling of comparative

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safety that his condition did not warrant. We are constantly hearing the statement made in consultation that fifty per cent. of cases of acute appendicitis recover without operation. This may be true on the first or second day of the disease; but on the third or fourth day, when the surgeon sees the case for the first time, it certainly is not true. A comparatively small proportion that have reached the third or fourth day, without decided improvement in the symptoms, recover without operative interference, in my experience. We are also told of cases in which, though suppuration occurred, spontaneous rupture took place into the intestine, and the patient recovered. Such a termination is certainly possible, and is not so infrequent as I formerly supposed. I have seen three such cases. The first case was that of a middle-aged German woman who had eaten freely of a raisin-soup, suppuration with spontaneous opening externally took place; raisin-seeds were discharged as well as some charcoal which I gave her to satisfy myself that there was communication still between the intestine and the abscess cavity. Rupture had already taken place when I first saw her. Healing followed, and the patient left the hospital apparently well. The second case was of a boy who had a sinus of a year's duration in the right groin, sometimes closed and sometimes open. Bone-disease was suspected, but not found; counter-opening made and kept open; an attack of peritonitis one year before I saw him, and semi-invalidism since. Several months after I operated upon him a fæcal concretion was discharged from the opening which I had made, and to my own mind explained the original attack of peritonitis (which was in reality appendicitis), and the trouble he had had for a year subsequently. The sinus healed promptly, and has given him no inconvenience since. The third case I saw only after death. The patient, a medical man, with a history of three or four attacks of pain in the region of the appendix, with fever lasting a week or ten days, at intervals of a few months. The last and fatal attack insidious, the patient being up and about on the day before he died with dysenteric symptoms. I was invited to be present at the autopsy, the case being considered one of obscure abdominal disease. The largest collection of pus that I have ever seen in a similar case was found, and it had burrowed

down behind the rectum, giving rise to tenesmus and bloody discharges. The abscess had perforated the head of the colon, apparently from without inward, giving rise to an appearance just the reverse of what we see in a perforating typhoid ulcer, the opening through the peritoneal coat being very much larger than that in the mucous coat. The appendix was to all appearances healthy. It was not, however, subjected to microscopic examination. But while such cases as these do occur, the termination is nothing more than a possibility. It is not probable, and resulted, in these cases, once in a cure, possibly permanent; once in a year of semi-invalidism, and once in death. We need not and would surely not take into our consideration such chances in our advice to physician or patient. Again, such statistics as are at present at our command are too general to be of any value in an individual case. And in not a few instances they are worse than useless, for without surgical aid, the patient who has about an even chance for recovery or death must wait for his verdict until he is either a convalescent or a corpse. If the time ever comes when we shall be able to foretell results by a symptom or a set of symptoms, our figures will be helpful; but that time has not yet arrived, and I doubt whether we shall ever be able to predict the outcome of an attack with any greater precision than at present. I have not, in my own experience, been able to rely upon any symptoms in the early stage to indicate that resolution or suppuration would be the more likely termination in a particular case. And in quoting such statistics as we have at present, we fail to bring before the patient the possibilities and even probabilities of recurrence and its dangers.

Another thought that I would like to present for consideration relates to the position that physicians very commonly take regarding the nature of appendicitis. It is by many in the profession looked upon as a medical disease, unless or until it has reached an operative stage, when it becomes surgical. The physician is even on record as saying to the surgeon, "When I want you I'll let you know, and I want you to come ready to operate." This puts the surgeon in a position in relation to the case that he will not shirk, indeed, but one that he does not desire. He would like to decide whether he is to operate, and

when; if the responsibility of the treatment comes on him, as it must if he does the operation. I think a good deal of importance should be attached to combating this claim made by many physicians.

The surgical nature of appendicitis would seem to be proved by the suppurative process, by the ulceration and gangrene, and general septic inflammation of the peritoneum, all of which are more or less common in half the cases, and possibly in every case; and still more by the fact that the diagnosis is largely chirurgical,—is made so largely by the hand; and, finally, by the treatment which is in so large a percentage of cases operative. Nor does the fact that many cases have recovered without operation take the disease out of the list of surgical affections. Another reason for considering the disease a surgical one has already been hinted at above. The end we have in view is not to be reached by answering the question, "How many lives can we save?" but "What, all things considered, is the very best that we can advise and do?" And to do our very best, it would seem reasonable that the surgeon should see the case at the earliest possible moment, and not be called upon so late that the best he can do is after all but second best. If our experiences, medical and surgical, are to yield the results for which we hope, the surgeon and physician must start on the same basis, and this manifestly is not the case if the surgeon is brought into contact with his patient two or three days later than the physician. Already in consultations a comparison is being instituted between the medical and operative treatment of appendicitis on the above basis. We must decline to accept the inferences drawn from such an unfair comparison. Let us adhere to the position taken in our most modern surgical writings, that appendicitis is a surgical disease from the beginning; our comparisons must be made on the basis of connection with the case from the start. And any one who assumes the responsibility of treatment ought to feel that he is doing surgical work just as he would in undertaking the treatment of a fracture. Surgery has nothing to regret in its present therapeutic attitude towards appendicitis; but if we shall be able to see our operative cases earlier, I feel confident we shall have even better success than we have had already.

A fallacy, but one that ought to be quickly dispelled after operating on a few cases of appendicitis, is expressed in speaking of the first day that the patient complains of pain as the first day of the disease. With about as much propriety might we speak of that as the first day of the disease when a typhoid ulcer perforates the intestine. Here an ulceration, always present in typhoid, but not to be located by the touch or pressure of the finger, has been steadily eating its way into the intestinal wall for two, three, or four weeks, when suddenly, and often without any symptoms to indicate its development, perforation takes place and the patient is in collapse. The comparison, I think, is a fair one, and the local conditions often the same. What we recognize, I believe, in appendicitis is peritonitis, and not the ulceration in the mucous membrane, which has been going on for a longer or shorter time; and instead of seeing the case on its first day, we are really seeing it in the majority of acute cases near its last day. This thought has made me much less willing to temporize with these patients than formerly. How many days may have been occupied in the ulcerative process we have no means of judging, as we have, approximately, in the perforation of a typhoid ulcer. The changes found in the appendix removed very early can hardly be explained with disease of only a day or two to account for them; and in those cases of sudden perforation without previous complaint, the inflammatory process must have existed for some time before the accident occurred.

The idea is still prevalent that the great danger from an acute attack of appendicitis lies in the rupture of the abscess wall, followed by a general septic peritonitis; but one who treats a case on this basis is doing so at great risk to his patient. That a septic peritonitis is the greatest danger we have to fear is quite true; but that it always, or I think I may say in the majority of cases, occurs in this way my own experience would lead me to doubt. I have been rather disposed to attribute the general inflammation to an extension from its original seat in or about the appendix without the formation of a limiting wall of exudation, or to an infection through the lymphatics. In a few cases without rupture of the appendix, and with no local collection of pus, there has been found already at the time of the

operation a general septic peritonitis. In one case a septic peritonitis was present with a well-defined abscess cavity, unruptured as far as I could discover. In many cases it is difficult to say in which of these ways the original inflammation gave rise to the general inflammation.

With regard to the dreaded foreign body, of which we formerly heard so much as a cause of appendicitis, I may say that, with the exception of the case reported of spontaneous opening with discharge of raisin-seeds, I have never found any foreign body of that nature. I have been in doubt as to the causal relation of fæcal concretions to the inflammatory trouble. Blows and falls, strains, exposure to cold, overeating, and constipation have been the alleged cause in a number of instances, and have had a correspondence in time with the onset of the disease; but what, if any, causal relation any one of them has borne to the attack of inflammation has been uncertain in my own mind.

An ulcerative process has been the starting-point in my own cases, rather than a gangrenous one. In the cases seen late a destructive inflammation has produced such ravages as to render it impossible to determine the character of the initial lesion. With the exception of these cases the typical picture has been of more or less extensive ulceration of the mucous coat, with or without fæcal concretions, the appendix swollen, its walls much thickened, constricted often on its mucous side, bright-red in color in the early operated cases, and dark, and often twisted spirally on itself in the cases subjected to a later operation. The gangrene has seemed to me to be usually due to twisting of the mesentery, and secondary to the ulceration, although of this I do not feel at all certain. No cases have presented a simple catarrhal inflammation.

Impressed with the importance of the views thus far expressed, I have felt the necessity for an early and exact diagnosis. To make an exact diagnosis late in the disease is easy, and to make an early probable diagnosis is not difficult, but to make it at the same time early and exact is in some cases impossible, without the aid of an exploratory incision. The abdominal cavity is proverbially a field of difficult diagnosis, and the reasons

are not far to seek; they are found in the great variety of structure, multiplicity of viscera, and their mobility and varying conditions within physiological limits, and to the many and varied pathological processes that are developed here. And when the field is still further narrowed to a consideration of the region of the appendix, we are dealing with an organ that is deep-seated, small in size, and with no functional action to be disturbed, and yield symptoms when disease attacks it. In the female the ovaries and tubes sometimes make the diagnosis, more difficult than in the male. Yet, with all these obstacles, both in the whole abdominal cavity and in the region of the appendix, I will venture the assertion that the mistakes in diagnosis made by the surgeon are not more numerous than those made by the physician or gynæcologist. The few mistakes that the surgeon makes in his diagnosis are exaggerated by quoting the histories of patients on whom operations have been performed, and the appendix found healthy. These patients count for much more than they are worth numerically; they are fairly offset by the fatal cases of unrecognized appendicitis not operated upon, and unrecognized, partly because they were not given the benefit of an exploratory incision.

The symptom on which I have relied, and the one without which I confess myself unable to make a diagnosis, is the tenderness,—the "McBurney point,"—never absent in my own personal experience, and never thus far making me mistaken in my diagnosis. The time will doubtless come when I shall be obliged to record an error; but thus far this symptom has not failed me. The other symptoms have, many of them, been such as are associated with other abdominal disease; but some of great value in confirming me in the diagnosis, such as the sudden onset of the disease, the tension of the muscles, the ill-defined tumor, constipation, the facial expression, the rigid position of the body maintained in moving. The other symptoms I have learned to depend on less, but recognize their value, such symptoms as nausea and vomiting, pain, the temperature and pulse, chills and sweating, and the evidences obtained by rectal examination. The value of these symptoms, however, has depended very much on the stage of the disease. Those cases that have been seen very early, and

have been marked by the sudden onset of severe pain with even moderate fever and tenderness at the McBurney point, and usually vomiting, have proved to be cases of appendicitis, whatever else they may have simulated before the operation. Later on, the abdominal wall has been rigid, but not so under an anæsthetic; the tumor present was easily felt with the patient anæsthetized, the pulse becoming hard and irritable. Rectal examination I have not made of late, because it has not helped me to a diagnosis where I have made it. The temperature, as indicated by the thermometer, has been of almost no value. The diagnosis, then, has been in many cases easily made, in most cases not difficult, even without incision, and in the few uncertain cases I have not hesitated to recommend and employ the exploratory cut to clear up the diagnosis, having less anxiety from the slight dangers of the incision than from the possible dangers of the appendicitis. The surgeon claims for exploratory laparotomy the same usefulness that the physician claims for his exploratory puncture of the thoracic cavity,—namely, to confirm or disprove a probable diagnosis, and such, in his doubtful cases, does not hesitate to make the incision or the puncture. The puncture in the abdominal cases has been discarded, partly on account of its danger, but more on account of the fact that the surgeon desires to see his patient before the exploratory puncture would be of any use to him. He wants to see the inflamed appendix, and not simply evacuate a perityphlitic abscess.

As to the treatment, I may say that, in those cases that I have seen lately, when a well-marked abscess-cavity has been present, I have been satisfied to evacuate the pus, wash out and pack the cavity with iodoform gauze, without making much search for the appendix. Sometimes I have removed the sloughed appendix with forceps, and also small fæcal concretions. The ultimate result in these cases, so far as I know them, has been a firm scar without hernia. The final result in many cases I do not know. One case so treated developed symptoms of appendicitis about a year after the operation. Resolution took place, but his subsequent condition I cannot state. The cases that I have been able to see or to treat very early have had a catgut or silk ligature applied without invasion of the stump,

the abdominal wound stitched up, and primary union has taken place. The large proportion of cases operated upon have been seen from the third to the fifth or sixth day. This has seemed to me the most undesirable time to operate, on account of the liability to cause the very thing we operate to avoid,—namely, infection of the peritoneum, and, exercising all the care possible to wall off the abscess-cavity from the general abdominal cavity, the pus will often pass out of our reach before we can remove it all, and the danger of infection is increased when we remove the appendix, and in doing so break up adhesions that have kept the pus circumscribed. In this third class of cases I have used a catgut or silk ligature to the base of the appendix, and should imagine that it would be a difficult thing to invert the stump on account of the thickened condition of its walls, a condition which has not been present in the operations very early. I am treating now my first case of fæcal fistula following the removal of the appendix, the patient being a very stout young man in apparently perfect health, operated upon on the fourth day from the first symptoms. The abscess-cavity contained unusually dark-colored and offensive pus and a fæcal concretion. His condition, except for the fistula, is satisfactory now, one week after the operation. In no other case have I met with this unfortunate accident. In cases operated on during this stage I have had some difficulty, without manipulating the intestines more than seemed wise, to recognize the colon. I have depended less on the appearance to the eye than on the thickness of the walls under the finger, the additional thickness furnished by the longitudinal bands, and by the shortness of the mesentery that holds the colon back when traction was made upon it. The tags of fatty tissue have not always been recognizable to the eye or the touch. The cavities have been packed with iodoform gauze, and when possible left undisturbed for five days.

The cases of septic peritonitis have with one exception been diagnosticated before operation by the usual symptoms. In this case, seen and operated on on the third day from the onset, the abdomen was sunken instead of being distended, and, in spite of thorough evacuation, irrigation, and drainage, terminated fatally, as all my other cases of this kind have done.

Nearly all the cases operated upon have been suffering from their first attack. The rest have had one previous attack, none more than one.

Of the cases of recurrence without operation, I have seen and been able to keep track of six. One had three attacks at intervals of a year, the last one fifteen years ago. Two have been free from attack for four years, having had three attacks previously; one five attacks in about three years and a half, the last one very mild, two years ago; the other two four or five attacks in less than a year, the last attack one year and one year and a half ago respectively. In the last four cases I have advised and rather urged operation, but after consideration they have declined to be operated upon, as they say, "while they are well."

Without going further into details of treatment, I may state what conclusions my experience has forced me to draw with reference to the subject of appendicitis:

(1) Appendicitis is a surgical disease from its beginning.

(2) Its diagnosis is usually not difficult.

(3) In doubtful cases exploratory laparotomy is justifiable.

(4) Appendicectomy, all things considered, offers the best chance, immediate and remote, for the patient.

(5) The operation should be done at the earliest possible moment.

Lack of experience in the operative treatment of recurrent appendicitis makes it impossible for me, with the limitations I have set for myself in this paper, to draw any conclusions; but I feel quite certain that an attack of recurrent appendicitis will be as rare in a patient who has had his appendix removed early in the first attack as a second attack of acute articular rheumatism in a joint of an amputated limb.